

High Seed Compressor for Propellant Densification, Phase I

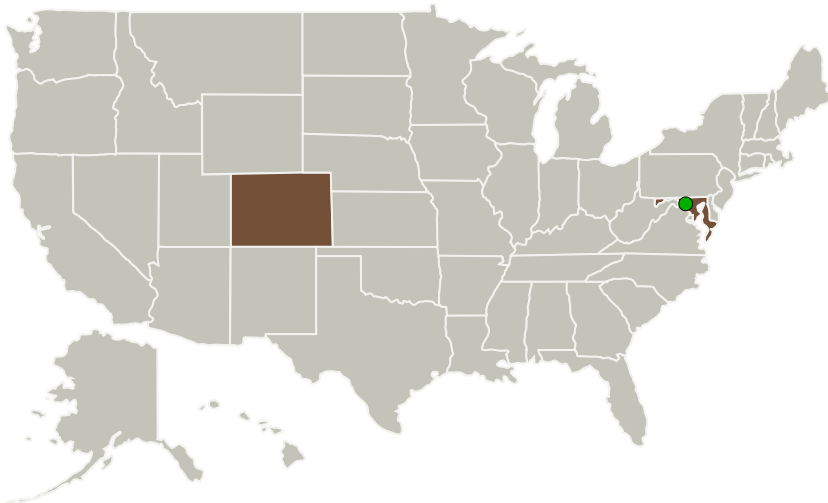
Completed Technology Project (2011 - 2011)



Project Introduction

Propellant densification systems particularly for H₂ require compression systems developing very large amounts of head. Development of this head requires multiple stages of compressors running at high speed. In the past these compressors have run on grease-packed ball bearings with very limited life. This project will utilize special foil bearings in place of the ball bearings and not only greatly increase bearing life but also permit even higher speed operation which will reduce the number of compression stages and increase system efficiency.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Barber-Nichols, Inc.	Lead Organization	Industry	Arvada, Colorado
 Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations

Colorado	Maryland
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Project Transitions

 **February 2011:** Project Start

 **September 2011:** Closed out

Closeout Documentation:

- Final Summary Chart(<https://techport.nasa.gov/file/138218>)

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Barber-Nichols, Inc.

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

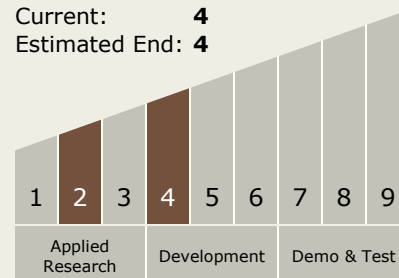
Jason L Preuss

Technology Maturity (TRL)

Start: 2

Current: 4

Estimated End: 4



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Technology Areas

Primary:

- TX01 Propulsion Systems
 - └ TX01.1 Chemical Space Propulsion
 - └ TX01.1.3 Cryogenic

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System